Disk or hoe opener drill?

When no-till operators choose between disk or hoe opener drill equipment, their decision can be influenced by several factors. Consideration should be given to the type of soil being worked, the amount of time the land has been in no-till operation, the amount of land being worked and preferred fertilizer placement. Each type of drill has advantages and disadvantages, as well as cost considerations that producers need to be aware of.

Hoe openers work better in lighter soils and soils that flow easier than a clay soil. Clay soils tend to form lumps and hoe openers tend to bunch and clump in clays, kicking up clods in clay soils.

“One real advantage that the hoe opener types have is in fertilizer placement,” says Don Wentz, reduced tillage agronomist with Reduced Tillage LINKAGES, Lethbridge. “Hoe openers can double shoot fertilizer and seed together, and place the fertilizer so it is in an ideal location to the seed. Often the hoe openers are wider spacing as well, anywhere from nine inches to even 12 inches, so there is plenty of room.”

The hoe opener clears a small path where the opener goes, exposing the soil to the sun and warming this area which presumably increasing germination. Hoe openers do, however, have a tendency to rake and bunch residue, especially in vine-like crops such as peas.

Another factor is cost, and hoe opener no-till drills are usually less expensive than the disk type and require less maintenance.

“The challenge is always residue management,” says Wentz. “It’s important to use good crop rotations so that straw build up does not become issue and hair pinning does not become problem. Soils that have been worked with no-till practices for some time have good tilth and structure. The longer land has been in no-till operation, the better a disk drill will work in these soils. Disk openers work very well under these conditions and under a wider range of soil conditions.”

With disk openers, fertilizer placement can be a problem. A paired-row or mid-row banding opener is required to double shoot, and this isn’t as easy as the hoe opener. One factor to keep in mind, however, is that there is not as much disturbance with a disk opener, and some producers feel this is an advantage.

“The general recommendation is that there be about one foot of drill for every 100 acres planted, for both hoe opener and disk opener no-till drills,” says Wentz. “The real advantage of
Field slope affects erosion potential

Slope can play a significant role in a farm operation. Producers need to be aware of the benefits in being able to calculate slope and the consequences of not calculating slope properly.

“Simply put, the outputs of slope, the eroded material running downhill from some upslope position, quickly become the inputs to some other ecological system, such as a body of water,” says Jason Cathcart, soil quality program coordinator with Alberta Environmentally Sustainable Agriculture (AESA), Alberta Agriculture, Food and Rural Development, Edmonton. “It can be said that field slope exerts a fundamental control on other parts of the landscape and environment.”

Slope has an effect on soil quality as highly sloped land is subject to topsoil loss or a loss in soil quality as a result of erosion processes. These processes often result in field blowouts and the exposure of rocks, which can be potentially damaging to farm machinery. Furthermore, the loss of topsoil exposes the lower less fertile B- and C-horizons, which typically result in poor crop growth, less crop residue return, and greater field variability. This starts the downward spiral in soil quality that is often a result of the unequal distribution and loss of nutrients, organic matter and moisture.

“From a regulatory point of view, slope falls under the Agricultural Operation Practices Act (AOPA) with respect to establishing the minimum setback distance from a common body of water when producers are considering applying manure,” says Cathcart. “These setback distances differ based on the degree of slope leading up to that body of water, and calculating that setback often requires specific knowledge of the field’s slope length. The greater the slope leading up to the edge of a water body, the farther away manure application must be made to avoid surface water contamination.”

Setback distances from water bodies for manure application

<table>
<thead>
<tr>
<th>Percent field slope</th>
<th>Minimum setback distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 4 per cent</td>
<td>30 m (approximately 100 feet)</td>
</tr>
<tr>
<td>Between 4 and 6 per cent</td>
<td>60 m (approximately 197 feet)</td>
</tr>
<tr>
<td>Between 6 and 12 per cent</td>
<td>90 m (approximately 296 feet)</td>
</tr>
<tr>
<td>Greater than 12 per cent</td>
<td>No application permitted</td>
</tr>
</tbody>
</table>

Adapted from “Manure Spreading Setback Distances: What is required by the Agricultural Operations Practices Act (AOPA)” (March 2005)

Knowledge of field slope is also required when filling in an Alberta Environmental Farm Plan (AEFP). Slope is considered on Worksheet 1 – Soil and Site Characteristics, where it is used to assess a farm’s risk to water erosion and surface water contamination. In the EFP program, slope is classed as:
1. Steep – more than 10 per cent
2. Moderate – or 2 to 10 per cent
3. Level – with field slope of less than 2 per cent.

Slope assessment in the AEFP program also requires knowledge on slope length, as determined using the visualization drive-by knowledge. Drive-by knowledge was described in the second part of this series and was featured in the July 3, 2006 issue of Agri-News.

“In wrapping up this series on field slope, I want to mention a few Beneficial Management Practices (BMPs) that can be employed by producers on both moderate and steep slopes,” says Cathcart. “On moderate slopes, BMPs to assist in mitigating potential erosion problems include vegetative buffer strips, grassed waterways, and/or contour farming. On more severe slopes, recommended BMPs include strip cropping, terrace structures and/or the use of water drop structures. Which BMPs are used, depends on both the severity of slope and whether removal of this land from crop production and returning it to permanent cover is an option. The key goal of these six BMP’s is to minimize slope length to reduce the potential for runoff accumulation and reduce the erosive energy of the flow.”

Field slope affects erosion potential, surface water contamination and crop response by exerting detrimental effects on soil quality. There are two important parameters to slope, those being slope length and per cent slope. There are a number of methods producers can use to calculate these parameters, ranging from trigonometric calculations to simple visualizations and drive-by assessments. Finally, what must be remembered is that slope plays a significant role in maintaining farm soil quality, achieving AOPA Regulations and in filling out an Environmental Farm Plan.
Agri-Food Discovery Place open for research

A new Alberta facility positions the province as a world research leader in food safety, value-added food and agri-industrial products.

The University of Alberta (U of A) hosted the official opening of the $25 million Agri-Food Discovery Place (AFDP) facility on June 23, 2006.

“This was a project that required dedication and commitment from a number of parties,” said Doug Horner, Minister of Alberta Agriculture. “The research capabilities and the cutting-edge technology that the facility has to offer will ensure Alberta’s place as a leader in the agri-food industry.

“This facility is going to help Alberta’s ag industry continue to grow in new and innovative ways, and examine new ways to make the world’s food supply safe and secure. Facilities like this will help us market to the world and promote the fact that we are leaders in making our food the best, the safest and the most secure.”

Agriculture research is changing, with additional attention being given to bio-health, medicine, innovations in product technology and value-added possibilities. AFDP is a sophisticated, advanced, leading-edge work and think place that will be the site of many Alberta-based breakthroughs.

“This is a one-of-a-kind facility, doing research done nowhere else in North America,” said Dr. Indira Samarasekera, president of the U of A. “It is an investment that will pay off many, many times over.”

There has been an increasing need for a facility like this. AFDP is home to the Crop Utilization and Enhanced Materials Research Unit and the Meat Safety and Processing Research Unit. The research at the facility will focus on:

- developing antimicrobials to improve safety and extend storage life of meats, pathogen intervention, and the impact of food processing on pathogen survival
- assessing sensory attributes and consumer perceptions for quality assurance and food product development
- supercritical fluid and grain fractionation technologies for the recovery of high-value components such as nutraceuticals and beta-glucan
- optimizing cereal fermentations for improved cereal foods and metabolic engineering of lactic acid bacteria for the production of value-added food ingredients

“The agriculture economy is in transition as it goes from a commodity-based system to new uses for the crops produced,” said Dr. John Kennelly, Dean, Faculty of Agriculture, Forestry and Home Economics, U of A. “These new agricultural produces range from new health products to bioplastics, and AFDP has the scientific capacity to make these new discoveries which, hopefully, will result in benefits and tremendous opportunities for producers in Alberta.”

The Bioindustrial Technology Division (BTD) of Alberta Agriculture will also have offices at AFDP. Working within this area, researchers and industry partners will collaborate with engineering experts on research ventures in the bioindustrial field.

“Equally important,” said Horner, “this facility will provide opportunities for Alberta graduate students to study, train and work with some of the best agri-food researchers and work in the best agri-food research facility.”

The U of A offers Alberta’s only undergraduate and graduate education in food science and technology. This world-class innovative research, training and technology transfer facility is a wonderful addition to the resources available to students.


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Southern Alberta community sets its sites on biofuel

Technology to produce biofuel and biodiesel have advanced considerably in the last few years. The production of biofuel and biodiesel is a fast growing industry in the United States, and Alberta, as a province has been looking at this industry for some time. There are currently no commercial biodiesel production sites in the province, and there is significant opportunity for growth in the province.

Recently, the County of Newell’s Department of Economic Development and Tourism completed a biodiesel production pre-feasibility study.
“The county is the first organization to produce a public study that outlines a wealth generating opportunity which specifically leverages the comparative advantages of our region,” says Doug Erdman, economic development/tourism coordinator with the County of Newell. “This is a significant opportunity for county entrepreneurs. The return on equity could be as much as 43 per cent before taxes on a shareholder investment of less than $9,000,000.”

The usual phases of business development comprise pre-feasibility study, feasibility study, business plan and finally the establishment of a viable business enterprise. The County of Newell hopes that the prefeasibility study will attract a group of committed investors to undertake the next phase of the development process.

“The County has a real competitive advantage as access to plentiful supplies of tallow and oilseed crops in the area exist,” says Erdman. “In light of falling margins in primary agriculture production, a biofuel cluster development would certainly fit the bill as an opportunity for a primary ag investor group to become involved in a profitable value added enterprise.”

A copy of the County of Newell’s prefeasibility study can be viewed and downloaded from their website at: www.countyofnewell.ab.ca.

The County of Newell is also planning a one-day seminar in Brooks expanding on this opportunity. Speakers will include equipment manufacturers, producers already in the industry and financing agencies. Further information on this seminar will be posted on the County of Newell’s website as plans are finalized.

The Canola Council of Canada and the Alberta Canola Producers Commission are hosting a Biodiesel: Powered by Canola conference in Calgary on July 17 and 18, 2006. For Albertans wishing to find out more about biodiesel production this will be another opportunity to listen to experts discuss this growing industry.

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**Alberta’s Great Tree Hunt is underway**

Trees are an important part of Alberta’s natural history. The Alberta Heritage Tree Project is asking Albertans to help celebrate their favorite trees in the province.

“The project was designed to raise awareness about the importance of trees, both historically and currently,” says Libby Fairweather, executive director, Heritage Tree Foundation of Canada, Turner Valley. “The Heritage Tree Foundation is asking Albertans to nominate trees that they consider special. The criteria for nomination are broad and there is no limit to the numbers of trees that can be nominated.”

Criteria that make trees, groves, avenues, shelterbelts or arboretum special:
- historical or cultural significance
- age, height, circumference/diameter
- canopy spread
- rare or horticultural significance
- community landmark
- commemorative tree/grove
- unusual location
- survivor of adverse conditions
- rare or endangered bird habitat
- part of an environmentally significant area

“What makes this project special and enduring, is capturing the stories behind the trees being nominated,” says Fairweather. “Trees provide a living link to the past and they often have stories and a little bit of folklore attached to them and they carry meaning for people. Albertans can nominate trees in their neighbourhood, community or trees they have seen on their travels within the province.”

Trees will be selected from those nominated by Regional Selection Committees. These committees will include local individuals from a wide variety of disciplines. Albertans interested in being part of a regional team and help select trees in their community are encouraged to call Fairweather at (403) 933-3099.

“Upon selection, each tree will receive a plaque,” says Fairweather. “With landowner’s permission, the plaque will be placed on the trunk or directly in front of the tree. This common identifying feature will make it easier for community members and visitors to locate a heritage tree.

“Locations of all heritage trees will be noted in the Heritage Trees of Alberta, which will be published in June 2007. As well as listing all heritage trees, the book will feature botanical, historical and cultural information on specific, selected trees.”

*Cont’d on page 5*
All stories and data collected about heritage trees will be featured on the Alberta Heritage Tree Project website in the featured Tree Registry.

Nominations must be received by October 31, 2006. A nomination form is available on the Heritage Tree Foundation at www.heritagetreefoundation.com, or by calling (403) 933-3099.

Contact: Libby Fairweather
(403) 933-3099

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Master Gardener program 2006

The Devonian Botanic Garden (DBG) is once again offering the Master Gardener program in the fall of 2006. The Master Gardener program, initiated in 1994, has been the steppingstone for many former program students to successfully pursued a career in horticulture. Many former students can be found working in garden centres, greenhouses and the landscaping industry, others have joined horticultural societies and furthered their personal interest in horticulture.

“The course is very challenging and involve a great deal of personal time to complete the homework assignments, practical training volunteer hours and the plant identification assignment,” says Gordon Nielson, education coordinator, DBG. “Trainees entering the program should have a high level of interest in gardening and be prepared for an intensive training program consisting of lectures and homework assignments combined with practical experience. Attendees must have the time and commitment to complete the course.”

Course classes will include sessions on approximately 16 to 20 of the following topics:

- annuals and biennials
- perennials
- plant genetics
- herb gardening
- plant identification
- plant propagation
- seeds and seed exchanges
- working with seeds
- garden pest control
- soils, fertilizers and plant nutrition
- indoor plants
- lighting systems
- wildflower gardening
- alpine gardening
- vegetable gardening
- woody ornamentals
- Japanese gardens
- botanical keys
- pruning
- budding and grafting
- landscape design
- hobby greenhouse gardening
- plant classification
- a history of gardens and gardeners
- container gardening
- botanical nomenclature
- lawn care and maintenance
- herbaria
- plant physiology

There is also a practicum component to the program. Practicum and volunteer experience can include public displays, horticulture training, herbaria and horticulture information sessions.

Trainees require a 90 per cent attendance rate, an overall average of 60 per cent grade (which includes homework and exams). Trainees must also complete their plant identification assignment and 80 hours of practicum/volunteer experience by approximately September 2007 to receive their certificate.

The Master Gardener Program is offered by the University of Alberta Devonian Botanic Garden and sponsored by the Friends of the Garden. Continuation of participation as a few hours of volunteer work each year at the DGB may be required to maintain an active certified status as a Master Gardener.

The Master Gardener program will run for 17 Wednesdays, from September 6, 2006 to January 10, 2007. Classes begin at 9:00 a.m. and end at 4:00 p.m.

Registration fee for the program is $475 (non-refundable) and must be paid prior to the first class. This fee includes all lectures, supplies used in the sessions and photocopy costs. It does not include textbooks.

An application form for the Master Gardener program must be filled out prior to acceptance. Applications are available by calling Devonian Education at (780) 987-2064. Interested Albertans are encouraged to apply early as there is limited space in the program. Application deadline for the fall session is September 4, 2006.

The DBG is five kilometres north of the town of Devon on highway 60 (just 20 minutes from Edmonton).

Contact: DGB Education
(780) 987-2064
4-H Beef Heifer Show – a big deal

Over 180 4-H members will flood the Olds Agricultural Society Fairgrounds, Olds, on July 17 to 19, 2006, for the 30th Provincial 4-H Beef Heifer Show.

The 4-H Beef Heifer Show gives both beef and non-beef members a chance to take part and compete in this three-day event. Regardless of whether a beef member is showing their livestock project, or a non-member is participating in the Team Grooming contest, the weekend is a whirlwind of activities and opportunities.

“The organization committee has outdone themselves yet again in creating programs that will challenge 4-H members and allow them to improve of their skill, and also reach the summit of the 4-H mandate—to meet new people and to have fun,” says Rob Smith, event organizer and 4-H specialist with Alberta Agriculture, Food and Rural Development, Airdrie.

Events over the first two days include the official opening and parade of clubs, team marketing, freshman showing classes, team grooming competitions, showmanship classes and judging competitions. The final day of the event is packed with awards, recognition and presentations. The Supreme and Reserve Purebred and Commercial Grand Champion Female will be selected, and the recipients of the ever-competitive Grand Aggregate Champion Award will be identified.

Last year’s Senior Grand Aggregate Champion and Supreme Grand Champion Crossbred winner, Matthew Kumlin believes in the positive experience that the Beef Heifer Show and 4-H create. “I have been a part of 4-H for 10 years and it has been a tremendous experience. Despite my now being done as a member, I want to go on to be a leader and an alumni. Being a part of 4-H has created a number of opportunities.”

The 4-H Beef Heifer Show enhances and highlights the skills and knowledge of all 4-H members. It also reinforces the idea that project dedication does pay off, that motivation creates the possibility for great accomplishments, and that fun is the perfect complement to hard work.

For further information on this event, contact Smith at (403) 948-8501 or e-mail rob.g.smith@gov.ab.ca. For further information on 4-H, visit the 4-H website at www.4h.ab.ca.

Contact: Rob Smith
(403) 948-8501

Agri-News Briefs

Thinking of exporting?

Alberta Agriculture, Food and Rural Development has a webpage that contains numerous export tools and links to sites for information on exporting. The site includes information for exporters, and forms and tools on subjects such as:

- Export readiness tools
  - articles and information on exporting and options and credit practices in export financing
  - BDC – a financial institution that plays a leadership role in delivering financial, investment and consulting services to Canadian small businesses, with a particular focus on the technology and export sectors of the economy
  - export guides and tools
  - step-by-step guide to exporting
  - responding to unsolicited international orders
  - understanding Incoterm (International Commercial Terms)

- Export
  - Canadian Automated Export Declaration (CAED)
  - exporting goods from Canada (Canadian Border Services Association)
  - export forms
  - export finance guide
  - freight quote
  - reporting of exported goods

To view or download this information, or forms, visit Alberta Agriculture’s website at www.agric.gov.ab.ca, click on Trade & Investment, Markets and then Export Tools.